REMARKS/ARGUMENTS

Receipt of the Office Action dated January 28, 2004 is hereby acknowledged. In that action, the Examiner: 1) indicated that the references cited in the Background section should be cited on a form PTO-1449; 2) rejected all the claims as allegedly omitting an essential element; 3) rejected claims 21-22, 27 and 30 as allegedly anticipated by an IBM Technical Disclosure Bulletin NN9301473 (hereafter IBM Bulletin); and 4) rejected claims 23-26 and 28-29 as alleged obvious over the IBM Bulletin in view of Guha (U.S. Patent No. 6,092,072).

With this response, Applicants amend claims 21-29. Reconsideration is respectfully requested.

I.   CITATION OF BACKGROUND SECTION REFERENCE

Applicants file concurrently with this Response an Information Disclosure Statement and form PTO-1449 citing the S. Selim *et al.* article entitled "K-Means-Type Algorithms: A Generalized Convergence Theorem and Characterization of Local Optimality" and the J. MacQueen article entitled "Some Methods for Classification and Analysis of Multivariate Observations" to address the Examiner's concerns.

II.   CLAIM AMENDMENTS AS A WHOLE

With this Response, Applicants amend claims 21-29 by removing the limitation numbering. Applicants make these amendments so as not to imply any particular ordering, and not to define over any prior art.

III.   SECTION 112 REJECTIONS

All the claims stand rejected for allegedly "omitting essential elements." In particular, the Office Action states, "the claims presented by the applicant do not sufficiently define the predetermined metric or how the computer uses the predetermined metric ... ." The Examiner need look no further than claims 23 and 24 to see a claimed example. In particular, claim 23 recites, "using the geometric center of the subset of data points and the predetermined metric to generate a value," and claim 24 recites, "determining whether the value is greater than zero." Clearly, in this claimed exemplary system, the predetermined metric is a value

relating the geometric centers of clusters. Claim 22 thus covers the systems of claims 23 and 24, and others.

Applicants appreciate the Examiner's noting that the expression was inadvertently omitted from claim 29. With this Response, Applicants have amended claim 29 to specifically recite the expression found on page 14 of the Specification.

IV.   SECTION 102 AND 103 REJECTIONS

Claim 21 was rejected as allegedly obvious over the IBM Bulletin. Applicants amend claim 21 as discussed above, and also to correct a grammatical deficiency.

The IBM Bulletin discloses two distinct processes: clustering; and declustering. *See* IBM Bulletin, Page 4. With regard to clustering, the IBM Bulletin states:

1.   At the beginning, **each circuit is a cluster on its own**.
2.   **Select two clusters** with maximum connectivities between them. **If the total number of circuits in the two clusters is below a control limit (clustering parameter)**, then merge the two clusters into one.

IBM Bulletin, Page 3 (emphasis added). Thus, the IBM Bulletin teaches clustering by selecting two clusters, and merging the clusters unless the combined size is too large.

Claim 21, by contrast, recites, "receiving into the computer a size parameter for **specifying the number of data points to be moved at one time**." In the system of the IBM Bulletin, any number of data points may be moved at one time, the "clustering parameter" only comes into play "If the total number of circuits in the two clusters is below a control limit." For this reason alone, Claim 21 should be allowed.

As for the declustering process described in the IBM Bulletin, the following statements are made:

However, the sequential approach used in the cluster-growing process may group together circuits, which may not give the best clustering in the global sense. In order to undo any mistake committed during clustering, the declustering steps are introduced. ... **Clusters are broken up into smaller pieces and move [sic]**

these smaller clusters around, until no significant improvement is obtained. **The process is repeated until each piece is a single circuit. To determine which cluster should be broken up, a declustering factor d is introduced. In each declustering step, reduce the maximum size of a cluster to 1/d of its original figures.**

IBM Bulletin, Page 4. Much like the "clustering parameter" above, the IBM Bulletin describes no limit to the number of circuits of a cluster that can be moved out at one time during a declustering procedure. The "declustering factor" plays only in selecting which clusters to break up, and the number of circuits that should remain after declustering.

Claim 21 recites, "receiving into the computer a size parameter for **specifying the number of data points to be moved at one time; clustering the data points by using the size parameter** to generate clustered results... ." Thus, the "declustering factor" is used in an opposite process; declustering rather than the claimed clustering. Further, the "declustering parameter" only controls the number of data points that remain after a declustering, rather than "number of data points to be moved at one time."

Based on the foregoing, Applicants respectfully submit that Claim 21, and all claims which depend from claim 21 (claims 22-30), should be allowed.

V.   CONCLUSION

Applicants respectfully request reconsideration and allowance of the pending claims. If the Examiner feels that a telephone conference would expedite the resolution of this case, he is respectfully requested to contact the undersigned.
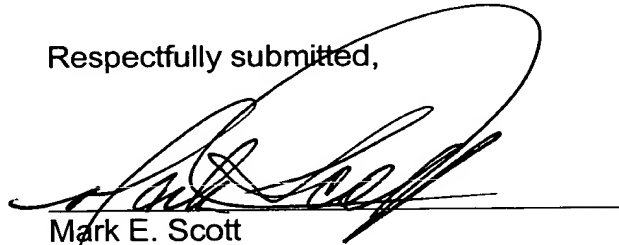
In the course of the foregoing discussions, Applicants may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the prior art which have yet to be raised, but which may be raised in the future.

If any fees or time extensions are inadvertently omitted or if any fees have been overpaid, please appropriately charge or credit those fees to Hewlett-Packard Company Deposit Account Number 08-2025 and enter any time extension(s) necessary to prevent this case from being abandoned.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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